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EXAMINER	
MIDKIFF, ANASTASIA	

ART UNIT	PAPER NUMBER
2882	

DATE MAILED: 07/27/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/781,212	MYERS ET AL.	
	Examiner	Art Unit	
	Anastasia Midkiff	2882	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 February 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-40* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-40* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 18-23 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With respect to Claim 18, the claim recites the limitation "said transparent conducting layer" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claims 19-23 are rejected based on their dependency upon Claim 18.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1,4-8,15-17 and 24-40 are rejected under 35 U.S.C. 102(b) as being anticipated by Chen et al. (US Patent Application Publication 2002/0167001; hereinafter Chen).

With respect to claims 1,36,37,38 and 40: Chen discloses, in figure 2 and throughout the disclosure, a photonic assisted emitter, comprising:

- an at least partially transparent electron source layer (10; paragraph 32, lines 4-6),
- a thin metal layer (14), and
- a tunneling layer (20) disposed between the at least partially transparent electron source layer and the thin metal layer.

With respect to claim 4: Chen discloses, in figure 2 and throughout the disclosure, the tunneling layer (20) disposed on the at least partially transparent electron source (10).

With respect to claim 5: Chen discloses the tunneling layer comprising nodular silicon (paragraph 19, lines 5-11).

With respect to claim 6: Chen discloses the tunneling layer having a thickness of between about 200 and 1000 Angstroms (paragraph 19, lines 12-14).

With respect to claim 7: Chen discloses the tunneling layer having a thickness of about 1,000 Angstroms (paragraph 19, line 12).

With respect to claim 8: Chen discloses, in figure 9 and throughout the disclosure, an oxide layer (78, paragraph 33, line 3-4) disposed on the tunneling layer (20).

With respect to claims 9 and 10: Chen discloses the oxide layer having a thickness between about 50 and 200 Angstroms (paragraph 33, lines 4-5).

With respect to claim 15: Chen discloses the thin metal layer comprises platinum (paragraph 19, line 20).

With respect to claim 16: Chen discloses the thin metal layer having a thickness of between about 20 and 120 Angstroms (paragraph 19, line 22).

With respect to claim 17: Chen discloses the thin metal layer having a thickness of about 100 Angstroms (paragraph 19, line 22).

With respect to claim 24: Chen discloses, in figure 4 and throughout the disclosure, an integrated circuit, comprising:

- a plurality of emitters (100) as defined by claim 1; and
- control circuitry (72) connected to the plurality of emitters.

With respect to claim 25: Chen discloses, in figure 2 and throughout the disclosure, a device making use of emissions, the device comprising:

- an emitter (50) as defined by claim 1; and
- a target (30), the emitter and the target being arranged to direct the emissions from the emitter towards the target to cause an effect on the target.

With respect to claim 26: Chen discloses the target comprises one of a memory medium or a display medium (paragraph 28, lines 1-3).

With respect to claim 27: Chen discloses, in figure 2 and throughout the disclosure, a focusing means (28) positioned between the target (30) and the thin metal layer (14).

With respect to claim 28: Chen discloses the focusing means comprises an electrostatic focusing lens having an aperture in a conductor settable at a conductor voltage, the conductor voltage being adjustable to change the focusing effect of the focusing lens (paragraph 23, lines 1-21).

With respect to claim 29: Chen discloses the target comprises a memory medium, and wherein the effect comprises a phase change, the phase change being detectable through measurement of electrical properties of the memory medium (paragraph 28, lines 1-24).

With respect to claim 30: Chen discloses further comprising a mover connected to one of the electron source or the memory medium (paragraph 28, line 9).

With respect to claim 31: Chen discloses the target comprising a display medium having a plurality of pixels, and wherein the effect comprises a visual change in one of the pixels (paragraph 27, lines 1-14).

With respect to claim 32: Chen discloses, in figure 7 and throughout the disclosure, an emitter device comprising:

- a plurality of emitter (100) as defined by claim 1 arranged in an array of emitters;
- a memory medium (58);

- a plurality of focusing lenses (28) arranged to cooperate with the array of emitters, each of the focusing lenses being configured to focus electrons emitted from one of the plurality of emitters and direct the focused electrons towards the memory medium, the focused electrons causing a structural phase change in the memory medium upon impact; and
- a reader circuit (62) for detecting the structural phase change in the memory medium through measurement of electrical properties of the memory medium.

With respect to claims 33,34 and 35: Chen discloses the tunneling layer is a layer formed from a material selected from the group of materials consisting of TaO2, SiC, SixNy (paragraph 39, line 3).

With respect to claim 39: Chen discloses, in figure 2 and throughout the disclosure, a method for enhancing electron tunneling in an emitter, the method comprising the steps of:

- applying a voltage (24) across a tunneling layer (20) disposed between a conductive at least partially transparent electron source layer (10) and a thin metal layer (14); and
- illuminating a surface of the tunneling layer with photons through the conductive at least partially transparent electron source layer.

Claims 1 and 11-14 are rejected under 35 U.S.C. 102(e) as being anticipated by Chen et al. (US Patent Application Publication 2003/0160557; hereinafter Chen).

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

With respect to claim 1: Chen discloses, in figure 2 and throughout the disclosure, a photonic assisted emitter, comprising:

- an at least partially transparent electron source layer (10; paragraph 64, lines 4-6),
- a thin metal layer (14), and
- a tunneling layer (20) disposed between the at least partially transparent electron source layer and the thin metal layer.

With respect to claim 11: Chen discloses the thin metal layer comprises a porous thin metal layer having nanohole openings (paragraph 33, lines 2-3).

With respect to claim 12: Chen discloses a diameter of the nanohole openings to be between 1 and 100 nanometers (paragraph 35, line 15).

With respect to claim 13: Chen discloses the nanohole openings being uniformly distributed on average but randomly spread across the surface of the porous thin metal layer (paragraph 35, lines 20-22).

With respect to claim 14: Chen discloses the porous thin metal layer has a porosity of at least 12.5% (paragraph 86, line 8).

Claims 1, 4, 6, 7, 15, 25, 26, 33, 26, and 40 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent to Negishi et al. (USP# 6,166,487).

With respect to Claim 1, Negishi et al. teaches a photonic assisted emitter, comprising: an at least partially transparent electron source layer (12, Column 20 Lines 54-67, and Column 21 Lines 1-2); a thin metal layer (15); and a tunneling layer (13) disposed between said at least partially transparent electron source layer and said thin metal layer (Figure 1).

With respect to Claim 4, Negishi et al. further teach that said tunneling layer (13) is disposed on said at least partially transparent electron source layer (12, Figure 1).

With respect to Claims 6 and 7, Negishi et al. further teach said tunneling layer (13) has a thickness of about 1,000 Å (Column 13, Lines 4-6).

With respect to Claim 15, Negishi et al. further teach said thin metal layer (15) comprises platinum (Column 13, Lines 7-9).

With respect to Claim 25, Negishi et al. further teach a device making use of emissions, comprising: an emitter as defined by Claim 1; and a target (1, 3R, 3G, 3B, Figure 25), said emitter and said target being arranged to direct said emissions from said emitter toward said target (Figure 25) to cause an effect on said target (Column 20, Lines 54-63, and Figure 25).

With respect to Claim 26, Negishi et al. further teach said target comprises a viewer display medium (Figure 25 and Column 21, Lines 9-11).

With respect to Claim 33, Negishi et al. further teach said tunneling layer (13) is a layer formed from Si_xN_y (Column 20, Lines 25-29).

With respect to Claim 36, Negishi et al. teach a method for making an emitter comprising the steps of: forming an at least partially transparent electron source layer (12, Column 20 Lines 54-67, Column 21 Lines 1-2, and Column 13 Lines 24-28); forming a tunneling layer (13) on said partially at least transparent electron source layer (Column 13, Lines 29-55); and forming a thin metal layer (15) on said tunneling layer (Column 13, Lines 56-59).

With respect to Claim 40, Negishi et al. teach a photonic assisted emitter, comprising: an at least partially transparent electron source layer (12, Column 20 Lines 54-67, and Column 21 Lines 1-2); a thin metal layer (15); and a tunneling layer (13) disposed between said at least partially transparent electron source layer and said thin metal layer (Figure 1), said tunneling layer including means for actively converting photons of one or more frequencies into photons of a different band of frequencies in the form of the materials used (Column 12 Lines 18-65, and Column 15 Lines 4-14).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Negishi et al., as for Claim 1 above, and in view of U.S. Patent to Mardilovich et al. (USP# 6,770,353).

With respect to Claim 5, Negishi et al. teach most of the elements of the claimed invention, including a tunneling layer (Column 12, Lines 18-25 and 61-65), but do not specifically teach nodular silicon.

Mardilovich et al. teaches the use of nodular silicon for a tunneling layer of an emitter device, providing uniformity of the layer to increase the percentage of emission sites used (Column 3 Lines 9-20, and Column 8 Lines 6-29).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the nodular silicon of Mardilovich et al. in the tunneling layer of Negishi et al., improving the uniformity of emission, and therefore efficiency, of the emitter device.

Claims 16-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Negishi et al.

With respect to Claims 16-17, Negishi et al. teach most of the elements of the claimed invention, including a thin metal layer (15), but do not specifically teach that said layer has a thickness of between about 20 Å and about 120 Å.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the range of 20 to 120 Å for the thickness of the thin metal layer, in the absence of any criticality, since it has been held that where the general

conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller, 105 USPQ 233 (CCPA 1955).*

Claims 8-10, 24, 27-35, and 37-39 are rejected under 35 U.S.C. 103(a) as being obvious over Negishi et al., as for Claims 1, 26, and 34 above, and in view of U.S. Patent Application Publication to Chen et al. (PGPUB# 2002/0167001).

With respect to Claims 8-10, Negishi et al. teach most of the elements of the claimed invention, but do not teach a separate oxide layer of a thickness of about 50 Å disposed on said tunneling layer.

Chen et al. teach an annealed tunneling emitter with an oxide layer (78) on a tunneling layer (20), having a thickness of about 50 Å to match said tunneling layer (Paragraph 39), to provide insulation for the emitter (Paragraph 33).

It would have been obvious to one of ordinary skill in the art at the time of the invention to use an oxide layer for insulation of the device, as taught by Chen et al.

With respect to Claim 24, Negishi et al. teach most of the elements of the claimed invention, including a display device comprising: a plurality of emitters as defined by Claim 1 above (Figure 47), connected by buses capable of being part of an integrated circuit (Column 31, Lines 19-23), but do not specifically teach control circuitry connected to said plurality of emitters.

Chen et al. teach a plurality of emitters as defined in Claim 1, connected to control circuitry (Figure 4), so as to provide control to the display device constructed therein.

It would have been obvious to one of ordinary skill in the art at the time of the invention to use the control circuitry of Chen et al. in the integrated circuit of Negishi et al. to provide control for a display device using emitters.

With respect to Claims 27-29, Negishi et al. teach most of the elements of the claimed invention, but do not teach a focusing means positioned between said target and said thin metal layer, said focusing means comprising an electrostatic focusing lens having an aperture in a conductor settable at a conductor voltage, said conductor voltage being adjustable to change the focusing effect of said focusing lens, and wherein said target comprises a memory medium, said effect comprising a phase change detectable through measurement of electrical properties of said medium.

Chen et al. teach a focusing means (48) positioned between a memory medium target (58) and a thin metal layer (14), said focusing means comprising an electrostatic focusing lens (48) having an aperture in a conductor settable at a conductor voltage (Paragraph 28 and Figure 7), said conductor voltage being adjustable to change the focusing effect (32) of said focusing lens (Paragraph 28, and Figure 7) to create media target output (Paragraph 28) by effecting a phase change of the memory media (60) that may be detected by amplifier (68) as reader output (70).

It would have been obvious to one of ordinary skill in the art at the time of the invention to use the memory media and phase change of Chen et al. in the device of Negishi et al. to realize the enhanced emissions of the emitter of Negishi et al. in a memory device with accurate reader output, as taught by Chen et al.

With respect to Claim 30, Chen et al. further teach a mover (58) connected to said memory medium (Figure 7) to position media with respect to emitters and to house the reader circuit (68, Paragraph 28).

It would have been obvious to one of ordinary skill in the art at the time of the invention to use the mover of Chen et al. in the apparatus of Negishi et al. to position media and reader circuit with respect to emitters for providing accurate reader output of a memory device, as taught by Chen et al.

With respect to Claim 31, Negishi et al. teach most of the elements of the claimed invention, including a display target medium (1, 3R, 3G, 3B, Figure 25) wherein said effect comprises a visual change in display target (Column 20, Lines 54-63, and Figure 25), but do not specifically teach that target medium has a plurality of pixels, and that the visual change occurs in one of said pixels.

Chen et al. teach a target comprising a display medium (40) having a plurality of pixels (44, 42), wherein said effect comprises a visual change in one of said pixels (42, Paragraph 27), to provide a display integrating an emitter device for direct photon viewing.

It would have been obvious to one of ordinary skill in the art at the time of the invention to use the pixilated display medium of Chen et al. in the apparatus of Negishi et al. to realize the enhanced emissions of the emitter device of Negishi et al. in a display that allows direct photon viewing, as taught by Chen et al.

With respect to Claim 32, Negishi et al. teach most of the elements of the claimed invention, including an emitter device, comprising: a plurality of emitters as defined by Claim 1 arranged in an array of emitters (Figure 47).

Negishi et al. do not teach a memory medium; a plurality of focusing lenses arranged to cooperate with said array of emitters, each of said focusing lenses being configured to focus electrons emitted from one of said plurality of emitters and direct said focused electrons towards said memory medium, said focused electrons causing a structural phase change in said memory medium upon impact; and a reader circuit for detecting the structural phase change in said memory medium through measurement of electrical properties of said medium.

Chen et al. teach a focusing means (48) positioned between a memory medium target (58) and a thin metal layer (14), said focusing means comprising an electrostatic focusing lens (48) having an aperture in a conductor settable at a conductor voltage (Paragraph 28 and Figure 7), said conductor voltage being adjustable to change the focusing effect (32) of said focusing lens (Paragraph 28, and Figure 7) to create media target output (Paragraph 28) by effecting a phase change of the memory media (60) that may be detected by amplifier (68) as reader output (70), and a mover (58) connected to said memory medium (Figure 7) to position media with respect to emitters and to house the reader circuit (68, Paragraph 28).

It would have been obvious to one of ordinary skill in the art at the time of the invention to use the memory media and phase change of Chen et al. in the device of

Negishi et al. to realize the enhanced emissions of the emitter of Negishi et al. in a memory device with accurate reader output, as taught by Chen et al.

With respect to Claims 33-35, Negishi et al. further teach said tunneling layer is formed of Si_xN_y (Column 12, Lines 18-29), a material known to create photons as a by product of electron tunneling.

With respect to Claims 37-39, Negishi et al. teach an enhanced electron emitter, and the method for its use, comprising: providing an at least partially transparent electron source layer (12, Column 20 Lines 54-67, and Column 21 Lines 1-2) in the emitter (Column 13, Lines 24-28, and Figure 25); providing a tunneling layer (13) in the emitter (Column 13, Lines 29-55, and Figure 25); and illuminating with photons a surface of said tunneling layer (13) by the fluorescent layer (3G, 3R, 3B) above the tunneling layer (Figure 25).

Negishi et al. do not teach that said illumination of tunneling layer occurs through the at least partially transparent electron source.

Chen et al. teach illuminating a tunneling layer (20) of an emitter through an at least partially transparent electron source (10) for stronger emission of energy from the cathode without increasing voltage applied (Paragraph 19).

It would have been obvious to one of ordinary skill in the art at the time of the invention to use the illumination method of Chen et al. in the apparatus and method of Negishi et al. to provide a more power efficient emitter, as taught by Chen et al.

Claims 2, 3, and 11-14 are rejected under 35 U.S.C. 103(a) as being obvious over Negishi et al., as for Claim 1 above, and in view of U.S. Patent Application Publication to Chen et al. (PGPUB# 2003/0160557).

The applied reference has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). This rejection might also be overcome by showing that the reference is disqualified under 35 U.S.C. 103(c) as prior art in a rejection under 35 U.S.C. 103(a). See MPEP § 706.02(l)(1) and § 706.02(l)(2).

With respect to Claim 2, Negishi et al. further teach most of the elements of the claimed invention, including a substantially transparent electron source layer (12, Column 20 Lines 54-67, and Column 21 Lines 1-2), but do not specifically teach that said source layer is metal oxide, and that metal oxide is InSnO.

Chen et al. teach the use of a layer of InSnO, also commonly known as an ITO (Indium Tin Oxide) layer, as a transparent conductive layer (Paragraph 42), to allow photons created during electron emission to escape the source layer into the tunneling layer and beyond the surface of the emitter (Paragraph 42).

It would have been obvious to one of ordinary skill in the art at the time of the invention to use the InSnO of Chen et al. as the transparent, conductive electron source supply of Negishi et al., InSnO being known for its photon emissive properties, to provide enhanced photon emissivity in an emitter, as taught by Chen et al. (Paragraph 29).

With respect to Claims 11-14, Negishi et al. teaches most of the elements of the claimed invention, including a thin metal layer (15), but does not teach that metal layer is porous with a porosity of at least 12.5%, having nanohole openings between about 1 nanometer to 100 nanometers uniformly distributed on average but randomly spread across the surface of said porous thin metal layer.

Chen et al. teach a thin metal layer (14) in an emitter, wherein said metal layer has a porosity of at least 12.5% (Paragraph 86), having nanohole openings (22) between about 1 nanometer to 100 nanometers (Paragraph 41) uniformly distributed on average but randomly spread across the surface of said porous thin metal layer (Paragraph 41 and Figures 1-2) to enhance emission of electrons through metal layer and to allow the passage of photons through metal layer (Paragraphs 37 and 43).

It would have been obvious to one of ordinary skill in the art at the time of the invention to use the nanohole openings of Chen et al. in the thin metal layer of Negishi

et al. to provide a more conductive metal layer with a uniform electric field for energy transmission, as taught by Chen et al.

Allowable Subject Matter

Claims 18-23 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

With respect to Claim 23, the best prior art of record discloses a photonic assisted emitter comprising many of the features as claimed in claim 1, including a transparent conducting layer and a light emitting layer. However, the prior art fails to teach or fairly suggest a photonic assisted emitter wherein the transparent conducting layer is disposed on the light emitting layer, in the manner required by independent Claim 18.

Claims 19-23 would be allowable by virtue of their dependency.

Response to Arguments

Applicant's arguments filed 28 February 2006 have been fully considered but they are not persuasive.

With respect to the rejections under 35 USC 102(b) and (e), Applicant asserts that Chen et al. ('001 and '557 patents) do not teach an "at least partially transparent electron source layer." Examiner respectfully disagrees.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the feature upon which applicant relies

(i.e., an optically transparent electron source layer) is not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Examiner notes that the prior art teaches an electron source layer (Chen, item 10) that is transparent to electrons as shown in the prior and above rejections, and is not used to reject claims that include optically transparent materials used for the electron source layer, *i.e.,* Claims 2-3.

Therefore the prior art rejections of the claims as being anticipated by Chen et al. are maintained.

Additionally, new art rejections are included in the above action for U.S. Patents to Negishi, et al. (USP# 6,166,487) and to Mardilovich et al. (USP# 6,770,353) for further clarification.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent to Troxell (USP# 5,646,479) regarding emitter devices and optically transparent layers used in same.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anastasia Midkiff whose telephone number is 571-272-5053. The examiner can normally be reached on M-F 7-4.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Glick can be reached on 571-272-2490. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

ASM
7/10/06

EDWARD J. GLICK
SUPERVISORY PATENT EXAMINER